

What is claimed is:

1. A method for forming a capacitor, comprising the steps of:
forming a lower electrode including a metal pattern and a layer comprising Pt covering an upper surface and sidewalls of the metal pattern on a substrate, wherein
5 the metal pattern is formed of a material capable of forming a conductive oxide;
forming a dielectric layer on the lower electrode; and
forming an upper electrode on the dielectric layer.
2. The method as recited in claim 1, wherein the step of forming
the lower electrode includes the steps of:
10 forming a sacrificial layer on the substrate;
forming a contact hole by selectively etching the sacrificial layer;
forming a seed layer comprising Pt in the contact hole;
filling the contact hole with a metal layer for the metal pattern;
removing the sacrificial layer, whereby the metal pattern is exposed; and
15 forming the layer comprising Pt on the upper surface and sidewalls of the
metal pattern.
3. The method as recited in claim 2, comprising forming the metal
layer with an electro plating process.
4. The method as recited in claim 2, wherein the step of forming
20 the layer comprising Pt includes the steps of:
forming the layer comprising Pt on the metal pattern with a sputtering
method; and
performing a blanket etch back process with a reactive ion etching process,
whereby the layer comprising Pt remains on the upper surface and sidewalls of the
25 metal pattern.
5. The method as recited in claim 2, comprising forming the seed
layer to a thickness of about 100 Å to about 300 Å.

6. The method as recited in claim 2, comprising forming the seed layer with a chemical vapor deposition method.

7. The method as recited in claim 2, comprising forming the metal pattern comprising a metal selected from the group consisting of Ru and Ir.

5 8. A capacitor comprising:
a lower electrode formed on a substrate, wherein the lower electrode includes a metal pattern and a layer comprising Pt covering an upper surface and sidewalls of the metal pattern, and wherein the metal pattern is formed of a material capable of forming a conductive oxide;

10 a dielectric layer formed on the lower electrode; and
an upper electrode formed on the dielectric layer.

9. The capacitor as recited in claim 8, further comprising a seed layer comprising Pt between the substrate and the metal pattern.

15 10. The capacitor as recited in claim 9, wherein the metal pattern is formed comprising a metal selected from the group consisting of Ru and Ir.